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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/887,264	06/25/2001	Gary Charles	CHARLES	7591
29556	7590	10/10/2003	EXAMINER	
LAW OFFICE OF DAVID J. SERBIN 1423 POWHATAN ST. UNIT 2, FIRST FLOOR ALEXANDRIA, VA 22314			NGUYEN, NGOC YEN M	
			ART UNIT	PAPER NUMBER
			1754	
DATE MAILED: 10/10/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/887,264	CHARLES ET AL
	Examiner	Art Unit
	Ngoc-Yen M. Nguyen	1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 25 June 2001.
- 2a) This action is FINAL.                                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engstrom et al (5,091,166) in view of Sprauer (2,833,624), Isa et al (4,421,730) and Ciuti et al (4,026,817).

Engstrom '166 discloses a process for producing chlorine dioxide by reacting in a reaction vessel an alkali metal chlorate, mineral acid and a reducing agent (note claim 1), wherein the reducing agent is hydrogen peroxide and the chloride amount is from about 0.001 to 0.8 moles per liter in the reaction vessel (note claim 9).

Engstrom '166 does not teach the (1) the premixing of the reactants, (2) the step of dissolving chlorine dioxide into an aqueous solution and (3) the partially spiral or helical flow of the motive water.

For (1), Sprauer is applied to teach that it is preferred in the art to premix the peroxide and the chlorate before feeding them into the reactor (note column 2, lines 40-46).

For (2), Isa '730 teaches that it is conventional in the art to remove the chlorine dioxide product from a single generator-crystallizer through a water ejector and to form an aqueous solution of chlorine dioxide (note sentence bridging columns 3-4).

For (3) Ciuti '817 discloses that to impart helicoidal penetration motion to the stream of water before its exit from the orifice of the a cone nozzle so as to increase the ejection effect of the converging portion of Venturi, a spirally wound (twisted) strip is inserted before the venturi (note column 3, lines 43-50). Ciuti '817 further discloses that the external conical surface of nozzle may adhere perfectly to the upper internal surface of the Venturi (note column 3, lines 55-56). Owing to the helicoidal grooves present on the external conical surface of nozzle 13, a dextrorse or sinistrorse helicoidal penetration motion is imparted to the oil inside the stream of water thus starting the emulsifying process in a continuous and constant way for a sufficient time to achieve the desired concentration (note column 4, lines 9-18).

It would have been obvious to one of ordinary skill in the art to absorb the chlorine dioxide product of Engstrom '166 into an aqueous stream to form an aqueous solution of chlorine dioxide because such solution is desired in the art for treating waste water as suggested by Isa '730 and to use the spirally wound strip and the nozzle with helicoidal grooves as suggested by Ciuti '817 because these features would increase the ejection effect of the venturi or the penetration motion of the flow to facilitate the mixing between the chlorine dioxide and the aqueous solution.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (703) 308-2536. The examiner can normally be reached on Part time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (703) 308-3837. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

*Ngoc-Yen Nguyen*  
Ngoc-Yen M. Nguyen  
Primary Examiner  
Art Unit 1754

nmn  
10/1/03